

## CLAIMS

1. A power amplifier comprising:  
input means for receiving signals at a plurality of different frequencies;  
a power transistor for amplifying received signals;  
first circuitry connected at one end to said power transistor and at another end to a relatively low frequency shorting circuitry, said first circuitry being such that said another end is an open circuit to said different frequencies, said first circuitry having a length which is substantially less than a quarter wavelength of said different frequencies.
2. A system as claimed in claim 1, wherein said first circuitry has a length in the range of .10 to .25 degrees of a signal envelope frequency.
3. A system as claimed in claim 2, wherein said first circuitry has a length in the range of .15 to .20 degrees of a signal envelope frequency.
4. A system as claimed in claim 3, wherein said first circuitry has a length of about .17 degrees of a signal envelope frequency.
5. A system as claimed in claim 1, wherein said first circuitry comprises a band stop filter.
6. A system as claimed in claim 1, wherein said first circuitry comprises a least one resonant circuit.
7. A system as claimed in claim 6, wherein the at least one resonant circuit comprises an inductor and a capacitor.

8. A system as claimed in claim 7 wherein said inductor and said capacitor are arranged in series or in parallel.

9. A system as claimed in claim 8, wherein said first circuitry comprises a first resonant circuit having an inductor and capacitor in parallel and a second resonant circuit having a capacitor and inductor in series.

10. A system as claimed in claim 1, wherein said first circuitry provides a voltage feed path.

11. A system as claimed in claim 1, wherein said first circuitry has a relatively low impedance path for said relatively low frequency.

12. A system amplifier as claimed in claim 1, wherein said different frequencies are radio frequencies.

13. A system as claimed in claim 1, wherein said low frequency is of the order of a difference in frequency of said different frequencies.

14. A system as claimed in claim 1, wherein said plurality of frequencies are provided by one of multi-carrier modulation and relatively wide bandwidth modulation.

15. A system as claimed in claim 1, wherein said power amplifier transistor is provided in an integrated circuit.

16. A system as claimed in claim 1, wherein said first circuitry is at least partly provided in said integrated circuit.

17. A system as claimed in claim 16, wherein at least one inductor is provided by a bond wire.

18. A system as claimed in claim 1, wherein memory effects are reduced.

19. A system as claimed in claim 1, wherein said signals comprise EDGE signals.

20. A system as claimed in claim 1, wherein said signals comprise multi carrier signals.

21. A system as claimed in claim 1, wherein said relatively low frequency shorting circuitry is arranged to short circuit at a reference plane of said power transistor.

22. A transmitter comprising a power amplifier system as claimed in claim 1.

23. An integrated circuit comprising:  
input means for receiving a signals at a plurality of different frequencies;  
a power transistor for amplifying received signals;  
first circuitry connected at one end to said power amplifier and at another end to a relatively low frequency shorting circuitry, said first circuitry being such that said another end is an open circuit to said different frequencies, said first circuitry having a length which is substantially less than a quarter wavelength of said different frequencies.